

FEATURE ARTICLES

RAPTOR RINGING WITH BALCHATRI TRAP

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Several Transvaal ringers have achieved success in trapping certain raptors using the Balchatri noose trap. Balchatri trapping from a motor vehicle can be very exciting and rewarding but great care must be taken in executing U-turns on the road.

1. THE BALCHATRI TRAP : ITS CONSTRUCTION

For the purpose of this article let us define a balchatri trap as a cage containing live bait and fitted with nooses for the purpose of trapping birds of prey. No other assumptions will be made.

Basic Premises. The ideal trap should be easy to handle, self-righting if badly dropped, would afford maximum protection for the bait from sun, ants and birds without making it seem inaccessible, and would result in the trapping of every interested bird. It should preferably be easily made from readily available, reasonably cheap material. As it would also need to be equally effective for all raptors encountered, it is obvious that not all of these requirements can be met.

Shape. Most traps of the balchatri type are hemispherical, probably because this shape is fairly easy to make by using a circle for the bottom and sectors to complete the structure. Ordinary chicken mesh can be deformed and stretched over the framework to form a hemisphere which retains its original shape until the arrival of the first moderately heavy bird. Fern baskets and lettuce washing sieves can be used if reinforced, but weldmesh cannot be used for this shape as it is virtually impossible to deform it into a three dimensional curve. Semicylindrical traps are easy to make and may be covered with any type of mesh, but there is a tendency for some birds to stand at one end and watch the bait, which possibly seems less accessible than in other shapes. Flattish "pancake" developments of these two basic shapes are easy to throw from a car without turning over, but usually make the bait very vulnerable. We currently favour the use of a truncated cone of a diameter suitable for the size of bird and a height sufficient to give the bait reasonable protection.

A button or anything else, which can be gripped between forefinger and thumb is fixed to the centre of the top of the trap with a length of nylon sufficiently long to clear the nooses, different articles or colours being used for easy identification of traps by an assistant.

Nooses: We know of no ideal material for nooses. Single strand Nylon or Perlon of a breaking strain of 3 to 35 kg. is usually used, but the thicker sizes tend to spring open and can actually release the bird after it has been snared, while too thin a grade could harm the bird. Mice have a habit of pulling the nooses into the trap and biting them off. The ideal material would be rather less springy than Nylon, and need not be as strong. Several different types of knot may be used for the loops, which must naturally not be of the slip type. The Bowline, especially if secured by an extra half hitch or a dab of cement such as Pliobond, is very suitable, as is the Double Overhand.

The loop is slipped over a thin rod such as a knitting needle and pulled tight with pliers. A secured Clove Hitch is usually used to fix the nooses to the trap.

Noose sizes can vary from about three cm. diameter upwards but, as there can be few things as frustrating as watching an African Hawk Eagle escape after being caught by a toe or talon, it is obvious that they should not be too small. However, it should be remembered that a noose of 10 cm. diameter has to be pulled for about 30 cm. (12 inches) before it is tight, and a bird feeling something against its leg tends to step out of the loop unless it is too preoccupied. It is significant that birds with long tarsi, such as the chanting goshawks, are easily caught, so that it would seem likely that the optimum noose size for a particular bird would be determined by the lengths of both the tarsus and the centre toe. Naturally, one has to compromise unless a trap is being made for one specific type.

The use of "outrigger" nooses extending outwards from the bottom of the trap for birds which tend to walk around rather than over it complicates handling considerably but seems worthy of further investigation.

Ants and Heat. These can sometimes be a considerable nuisance - both can kill the bait. Our latest traps have the trap proper attached to a bottom weighting ring by four short legs, the weighting ring being of sufficient thickness to provide the necessary dead weight for larger birds and a diameter somewhat less than the bottom diameter of the trap itself. The diameter of the ring and length of the legs is made such that the trap will always fall the right way up if badly dropped from the car. This design is fairly ant proof, while fitting a disc of foam plastic inside the weighting ring decreases the mess made by the bait and can be wet in very hot weather. The use of the plastic largely cancels the advantages this design has against ants. If the use of the foam disc is considered desirable, the design could be improved by supporting a thin foam disc well clear of the lower ring by means of wires between the legs or even putting it inside the trap.

General Observations. Some birds, notably the *Milvus* species, seem to avoid all traps so far tried, and it has been noticed that *M. melanus* seems suspicious of traps of a rectangular shape. Consideration is being given to the design of a less obvious trap, but this presents many problems.

Conclusion. It is obvious that much further investigation will be required before a trap with optimum characteristics can be designed. The size, spacing and orientation of nooses constitutes a study in itself, and it is hoped that this article will result in the pooling of acquired knowledge towards a greater overall efficiency.

2. BAIT

The most versatile and successful of trapping animals in our experience are "white mice" (as used in laboratories, or sold as pets in shops). They have the following advantages as bait animals. They are very mobile in the balchatri trap, especially if two are put in one trap. We use two mice in the trap as standard procedure. They are clearly visible against most backgrounds. They are intelligent and soon learn to keep away from the edges of the trap. Inexperienced mice may be injured, but once they have been used in the trap on a few occasions, further injuries are uncommon. They are easy to keep and feed. They have a wide range of predators (including large eagles). In fact too large a range - we have caught from time to time, two cats, one dog and one mongoose. A near catch was a Blackbacked Jackal. Under Transvaal conditions white mice have one serious disadvantage - they are heat sensitive and will die in 15 minutes on a hot summer day if the trap is dropped in the sun. A simple adaption in trap usage has

compensated for this weakness. A sponge is placed below the floor of the trap (see part I above). If the sponge is wet there is very little chance of the mice dying even in 30 minutes. We have had little success with guinea pigs and with pigeons as bait, but other Transvaal rangers have had reasonable success. Apparently one pigeon in a trap is a more successful arrangement than two pigeons. If two are placed in a trap they crouch down securely next to one another and make no further movements. A rather comic combination we once used was a guinea pig and a pigeon together in a trap. The guinea pig (which was put into the balchatri at the last minute) continually rushed for cover underneath the pigeon, which then had no option but to bob up and down like a see-saw. This may be an idea to obtain more movement in the trap, but all we can say is that our plot failed to impress one splendid Lanner Falcon in a baobab tree in the northern Transvaal.

3. THE DROPPING PROCEDURE

Road Dropping. In the car all traps are kept loaded with mice. When a bird is spotted within a trappable distance (up to 100 meters, provided there is a clear view for the bird), a door is opened and the trap dropped out of the car, preferably on the side of the road opposite to the bird (to shield the action of dropping the trap). It may be necessary to perform one or two U-turns before dropping is possible. (Two U-turns are necessary if the bird is seen on the righthand side, and if it is seen too late to drop the trap directly on the way past.) The following must be remembered while dropping:-

- (i) The car should not stop. The speed at which the car moves is not critical, but it is advisable to keep an even speed. Any changing of gears or acceleration may cause the bird to fly. If the bird is shy and hunches when one first passes it, it is advisable to go past at a fast even speed. On sandy ground successful dropping may take place up to a speed of 60 kmh. On stony ground the car should travel slower.
- (ii) The trap must be dropped on the extreme edge of the road, or even on the grass beside the road. Dropping near to the centre of the road can be dangerous to passing cars and to the bird if caught.
- (iii) If the bird is not in a position to see the trap easily (if for example, the bird is facing away from the road) it often pays to give a short sharp squeak with a child's toy, or to hoot once. Hooting is rather loud and may scare off a nervous bird.
- (iv) If there are two or more raptors, drop two traps if possible. It is very impressive to trap two birds on one trap, but one bird will often keep another of the same species away from the trap, if only one trap is dropped.
- (v) Whenever dropping a trap which does not have the optimal noose size for the bird concerned, drop a trap noosed with the noose size next largest, not the size next smallest, since such a trap will tend to trap the bird concerned by the toe rather than the tarsus. Such birds are loosely caught and may struggle free.

Having dropped successfully, drive off and wait 50 - 100 meters away. Watch carefully with binoculars. Do not lose hope if the bird flies over the trap once or twice, it may often come back and land on the trap. If the bird does not come down at all it may pay to:

- (i) drop a second trap near to the first trap,
- (ii) drive past and merely make sure the bird has seen and is watching the trap. If not, hoot or squeak.

(iii) If the bird is really showing no interest and is, say, preening, pick up the trap and look for another bird. The time to wait is, of course, influenced by the species, but in the case of a common bird like a Black-Shouldered Kite, it is seldom worth waiting longer than 5 minutes, if the bird is taking no interest.

Once a bird is caught - in 99% of cases this is around one or more legs, and in 1% of cases is around the neck (the bird does not hurt itself) it flaps vigorously. At this stage drive up safely but fast and stop sharply in front of the bird. This keeps the bird struggling against the closed noose. To remove the caught bird it is necessary first to grasp both legs (these are the dangerous parts of the raptor) and then undo the nooses. The beak is not very dangerous, and is hardly ever used to attack the ringer, except in kestrels and falcons, where care must be taken. Until experienced, it may help to wear a pair of thin but strong gloves.

In handling the bird, the chief principle again is to have the legs under control. The bird may be allowed to flap its wings, and indeed this is often better than pressing too firmly on closed wings. This can cause ruffling of the feather structure.

Road dropping for flying raptors is, for reasons we do not understand almost entirely unsuccessful.

Hand Dropping. This may be used if there is no alternative, for instance, if a bird is too far off the road. We have caught two Pale Chanting Goshawks by entirely unshielded hand drops.

4. SPECIES WHICH MAY BE CAUGHT

The authors of this article have in 1 year trapped the following birds:

- Black Shouldered Kite (68).
- Greater Kestrel (57). Birds bite and kick a great deal.
- Pale Chanting Goshawk (24). Extremely easy to trap.
- Dark Chanting Goshawk (4)
- Lizzard Buzzard (3)
- Lanner Falcon (3). Contrary to popular opinion, can definitely be trapped on mice.
- Rock Kestrel (3).
- Steppe Buzzard (8). Difficult to trap (not, evidently for the Cape trappers). Walk suspiciously around trap and will not climb on to trap easily.
- Little Banded Goshawk (2)
- Gabar Goshawk (1). Shy. Difficult to drop a trap successfully for this species.
- African Hawk Eagle (1) Trapped on white mice. Remarkably
- Wahlbergs Eagle (2) easy to handle. " " "
- Black-breasted Snake Eagle (1) " " "
- Spotted Eagle-owl (11). Fairly easy to trap. Trapping procedure same as in case of diurnal raptors. Best hunted on roads where poles close to road (use headlights) or on moonlit nights. Suggest use gloves when handling owls.

A note on MILVUS KITES (Yellow-billed and Black Kites): Extremely shy of balchatri trap and indeed of any trapping method. Mr. Mendelsohn of NTOS has trapped one Yellow Billed Kite on a balchatri trap.

Other Transvaal balchatri ringers have caught several species we have not managed to trap, including Martial Eagle, Tawny Eagle, Lesser Kestrel, and Eastern Red-footed Kestrel.

5. RECAPTURES AND RECOVERIES

Although we have not sent in many records yet it appears from other raptor ringing data that recapture and recovery figures are remarkably high. Many raptors are killed or found dead along the road. Also certain species have proved easy to retrap. In one year out of 57 Greater Kestrel ringed, 4 have been retrapped by other ringers.



Black-shouldered Kite attacking Balchatri trap. Photo: Dr. Shan Thomas,

6. TRAPPING FIGURES

Figures on any individual day may vary ridiculously, but on the average we estimate that we have obtained the following figures. (In one day ($2\frac{1}{2}$ - 3 hours are spent by us on processing the birds: we do this very thoroughly and spend about $\frac{1}{2}$ hour per bird.)

- (a) birds which come down to trap, as a percentage of birds for which trap is dropped (reasonably trappable species) 35 - 40%.
- (b) birds caught, as a percentage of birds which come down to trap - 80%
- (c) birds/day - Springbok Flats, 7. N.W. Transvaal Bushveld, 4.

(Ringers should note that the above details of the balchatri are included for the benefit of ringers only. SAFRING has a limited circulation to ringers and ringing organisations. Details of the balchatri should not be allowed to get into the wrong hands - Ed.)